

INTRARENAL EPIDERMAL CYST

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Although renal cystic formations are seen frequently and arise with diverse symptoms, epidermal cyst is a very unusual cause of renal masses. A 50-year-old woman was admitted to our clinic because of lumbar pain, hematuria and dysuria that lasted for 2 months. An atrophic and dysfunctional right kidney was identified. Transperitoneal laparoscopic simple nephrectomy was performed. Microscopic examination revealed typical findings of epidermoid cyst. According to the literature, intrarenal epidermal cysts are usually treated by nephrectomy because they cannot be differentiated from renal masses. To the best of our knowledge, this case report of an epidermoid cyst located in the renal parenchyma of a female patient is the first in the English-language literature.

Key Words: epidermal cyst, renal cyst
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Simple cysts of the kidney are the most frequently seen renal mass lesions, and account for 70% of asymptomatic lesions. They are seen in 50% of individuals aged over 50 years [1]. Epidermal cysts are very rare among renal cystic mass lesions [1,2]. Here, we report a case of renal epidermoid cyst that had been treated surgically as a cystic renal mass lesion and a review of the literature.

CASE PRESENTATION

A 48-year-old female patient was referred to our clinic with complaints of lumbar pain, hematuria and dysuria. The results of physical examination were normal. There was no abnormality in routine blood,

biochemical and urine analysis. No histopathological features were seen by direct abdominal X-ray in the supine position. By ultrasonographic examination, the right kidney was found to be atrophic with irregular and lobulated contours, and its parenchymal echo was increased to grade I/II, whereas the left kidney had a normal appearance. Separate renal functions were investigated with Tc-^{99m}mercaptoacetyl triglycine, and we found that the contribution of the right kidney to the total function was 10%. It was decided to treat the patient with laparoscopic transperitoneal nephrectomy. After detailed histopathological examination, the specimen was diagnosed as an intrarenal epidermal cyst.

Upon macroscopic examination of nephrectomy material of 7 × 5 × 2 cm in size, we found a cystic area, which had irregular walls at the superior pole under the capsule, with a diameter of 3 cm, and a second cystic area that was brown in color with a diameter of 1.5 cm, adjacent to the former and settled to renal parenchyma.

Hematoxylin and eosin staining of the specimen revealed a typical epidermal cyst that was surrounded with stratified squamous epithelium (Figure 1) and



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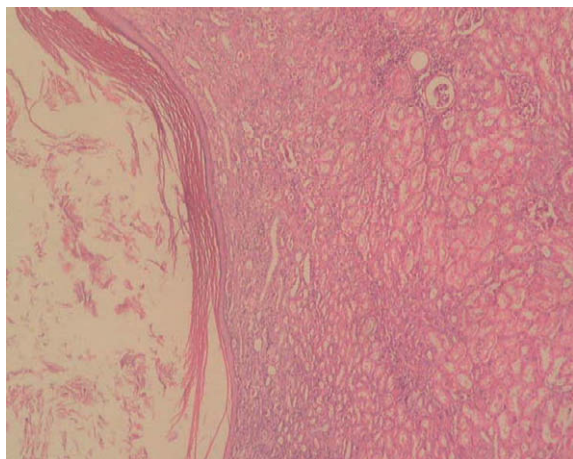


Figure 1. Epidermal cyst neighboring the renal parenchyma and surrounded with multilayer squamous epithelium with lamellar keratinous material in the lumen (hematoxylin and eosin staining, original magnification, 100×).

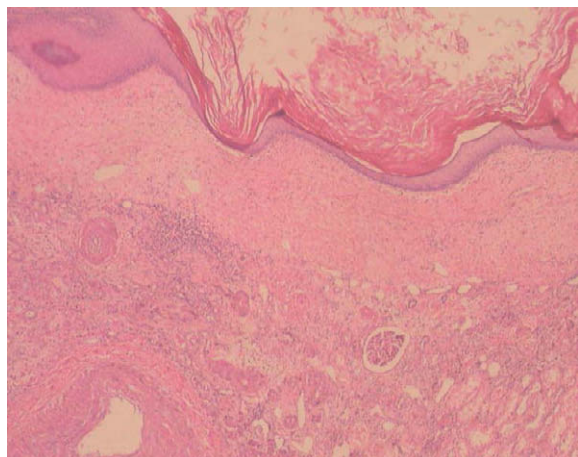


Figure 2. Chronic pyelonephritis in the renal parenchyma neighboring the epidermal cyst (hematoxylin and eosin staining, original magnification, 100×).

layered with keratin and contiguous chronic pyelonephritis (Figure 2). No hair, sebaceous glands or other skin adnexa were seen within the cyst, nor any findings suggestive of malignancy.

DISCUSSION

It is thought that epidermal remnants that originate from the Wolf channel play a role in the etiology of renal epidermal cysts, and the cyst is formed as a result of aberrant ectodermal implantation during

embryogenesis [3]. Nonetheless, in a paper published in 2003 which described the development of an epidermal cyst following treatment with shock wave lithotripsy, cyst pathogenesis was related to traumatic metaplasia that was enhanced by the renal stone, treatment with shock wave lithotripsy, or both [4].

Renal epidermoid cyst is histopathologically different from cystic teratoma and dermoid cyst. Although cystic teratoma includes a structure that involves at least two germ cells [3], renal dermoid cyst includes material of ectodermal origin [5]. Like dermoid cysts, epidermoid cysts are also ectodermal in origin; however, they do not include hair, sebaceous glands or skin adnexa. There have been two previously reported cases of renal epidermoid cyst [2,4]. However, apart from carcinoids accompanied by teratomas, not including malignancy, it is impossible to make a definite diagnosis before surgery [4].

For the differential diagnosis of radiological findings, teratoma-group lesions (i.e. epidermoid cyst, dermoid cyst, and cystic teratoma), tuberculous abscess, Wilm's tumor, xanthogranulomatous pyelonephritis, metastasis of osteogenic sarcoma, and renal cell carcinoma should be considered [2,6]. Duprat et al [2] reported a case in which partial nephrectomy was performed for a mass lesion that was thought to be an old tubercular focus, but epidermoid cyst was revealed by histopathological examination. A well-defined benign renal cyst with calcifications suggests the existence of a possible epidermoid cyst, together with radiological findings, and must be considered in the differential diagnosis [4,7].

Renal epidermoid cyst has no specific symptoms. Two cases of renal epidermoid cyst with lumbar pain have been reported in the literature; one with gross hematuria and radiologically large calcifications, and the other with fistulous communication in calices [3].

Our case differed from others in that it had non-specific symptoms, atrophic kidney revealed by ultrasonography, and absence of cyst wall calcification. Also, to the best of our knowledge, it is the only female case in the literature. We performed nephrectomy because the separate renal function is decreased below 10%. In the other cases reported in the literature, however, nephrectomy was performed because of strong suspicions of malignancy.

Preoperative definitive diagnosis for intrarenal epidermoid cyst seems to be difficult. Although radiological findings arouse suspicion of intrarenal

epidermoid cyst, a definitive diagnosis is made after histopathological examination.

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